

## **PREDICTION OF FACTORS AFFECT DELINQUENT BEHAVIOR IN DELINQUENT AND NON- DELINQUENT ADOLESCENTS**

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### **ABSTRACT**

The present research aims to investigate factors which predict delinquent behavior risk in delinquent adolescents. 71 delinquent adolescents who were kept in center for education and rehabilitation due to crime commitment were selected by means of accessible sampling. Perceived attachment questionnaire, five big personality traits questionnaire, Wechsler's revised intelligence test and also a demographic questionnaire which measured information like family income level, parents' education level, divorce, parents' crime commitment background and delinquent adolescents' academic features were used to collect data. Results of logistic correlation test showed that adolescents' delinquency has relationship with father's crime commitment, socio-economic status, low verbal intelligence coefficient, low academic progress (average), neuroticism personality trait and conscientiousness but it does not have any relationship with mother's age and parents' divorce.

**Keywords:** *Delinquent Adolescents, Demographic Factor, Personality Traits, Perceived Attachment and Intellectual Capacity*

### **INTRODUCTION**

There are three kinds of studies on the main factors which affect adolescents' delinquency behavior which try to show which factor is decisive in determining anti-social behaviors. The first class uses behavioral and genetic design and tries to test the influence of any kind of sexual behavior in genetic and environmental etiology on antisocial behavior. The second category of studies tries to identify delinquency in one of the family members which is followed by similar behavior in another member. The third category which is also very common includes studies which deal with delinquent and antisocial behavior risky factors in adolescents (Moffitt *et al.*, 1999). Different studies mention different causes for delinquency. Farrington *et al.*, (2010) mention the following factors out of 25 effective factors in antisocial behavior in children aged 8-10 years old which lead to adolescence delinquency:

Physical ignorance, weak involvement of father in works, upset family, parents' disagreements, large population of family, father's offence-making, mother's offence-making, sister and brother offence-making, low age of mother, mother's depression, low family income, low social status of family, delinquency at school, low verbal intelligence, weak concentration, and deception and cheating.

Salekin and Lynam (2010) investigated factors which affect antisocial behaviors of children. They showed that factors like criminal and formerly-imprisoned father, high adolescent temerity and courage, depressed mother, weak concentration and attention and criminal brother/sister can predict delinquency. Lynam (2010) found conscientiousness and agreeableness personality traits; Larsson *et al.*, (2008) found negative child-raising; Farrington (2000) found parents' divorce before 10 years; Hogan (1999) found low intelligence quotient; Farrington and Loeber (1999) found low parental positive strengthening; Marshal and Cooke (1999) found weak discipline and supervision of parents over children and ignorance of children; Lyons-Ruth *et al.*, (1997) found a combination of weak intellectual transformation and unsafe-agitated attachment; Patterson *et al.*, (1992) found the influence of parents' punishing behavior; Wells and Rankin (1991) found upset family; New son and New son (1989) found parental punishment; Mc Cord (1983) found parents' divorce in beginning years, non-affectionate mothers and parents' conflicts; Lewis

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*et al.*, (1982) found low emotional involvement of parents with children and West and Farrington (1973) found agitated educational style and low emotional involvement of parents to be related to delinquency.

### Literature Review and Hypotheses

We use previous studies (Hawkins *et al.*, 1998) and emphasize on antisocial and delinquent behavior risk factors:

1. Parental risk predictors like mother's age (adolescents' mothers)
2. Family risk predictors like low socio-economic status and strict discipline
3. Cognitive and neurological factors risk predictors like low IQ
4. Behavioral risk predictors like temperament, personality traits and hyperactivity
5. Predictors of risks concerned with relationship with friends like delinquent friends and rejection by friends

### Maternal Risk Predictors

Some studies show maternal personality traits, factors in pregnancy period or in primary years of the first child influence antisocial and delinquent behaviors. Premature parenting may lead to low child-raising quality due to economic pressure or because adolescent's mother may have tendency to delinquent behavior, this may cause antisocial behavior in adolescents (Maynard, 1997). Furthermore, low IQ of mother like weak reading skills may influence child's antisocial behavior via endangering child's confrontation with school assignments (Mandel, 1997). Parents' low psychological health harms attention, affection, energy and judgment of parents and this in part has negative influence on children's antisocial behavior (Downey and Coyne, 1990; Rutter, 1990). Parents' crime committing can also influence antisocial behaviors of children via other social defects, genetic impacts and socialization process (Farrington, 1995). Mothers' features which may have relationship with children's delinquent and antisocial behaviors are as follows:

1. Mother's age at childbirth
2. IQ
3. Reading skills
4. Psychological health problems
5. Neurotic disorders
6. Crime commitment (delinquent action background)

### Family Danger Predictors

Former studies show that factors like strict and agitated discipline in family, high-struggle family environments have relationship with antisocial and delinquent behavior (Dishion and Patterson, 1997; Dodge *et al.*, 1990; Loeber and Stouthamer-Loeber, 1986; Patterson *et al.*, 1989; Straus *et al.*, 1997). Similarly, low social and economic status of family and instable family conditions may result in antisocial and delinquent behavior because these factors reduce parents' abilities to educate children and disturbs parent-child relationship (Brooks-Gunn and Duncan, 1997; Fergusson *et al.*, 1992; McLanahan and Sanford, 1994). For short, family features which affect delinquency are as follows:

1. Deviation in parent-child interaction like repetitive negative emotional expressions, child humiliation, permanent criticism of the child (Henry *et al.*, 1996).
2. Strict discipline like slapping and physical punishing, threatening to beating, threatening to depriving child from something in ages 7 and 9 (Magdol *et al.*, 1998).
3. Instable or disharmonious discipline of parents at ages 7 and 9.
4. Conflict or struggle within family.
5. Change in the number of parents such as divorce or death of parents, presence of stepmother and her child in the family, child's life with family members other than father and mother or living with a caretaker or nurse, parents' remarriage, step-mother and step-father until age 11.
6. The number of residence movement from 5 to 11.
7. The number of years living with one of the parents (parent who has not married after divorce) before age 11 (Henry *et al.*, 1993).
8. Socio-economic status of the family.

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9. Relationship with parents: by means of a questionnaire which measures attachment to parents including items like whether the teenager feels he or she can trust in his or her parents-way of establishing relationship with parents-alienation from parents (Nada-Raja *et al.*, 1992).

### Child Neurological Risk Predictors

Considering the results of numerous studies, IQ and especially verbal intelligence and individual differences in neuro-psychological performances are effective factors in primary antisocial behavior (Moffitt, 1993; Wilson and Herrnstein, 1985). Moffitt (1990), White *et al.*, (1990), and Den no (1990) showed that there is a relationship between IQ and delinquency especially when IQ is measured before growth and development of illegal behaviors. Furthermore, there is a relationship between IQ and delinquency especially after socio-economic status, academic progress and child's motivation is controlled during intelligence test period (Lynam *et al.*, 1993).

Some studies evaluated neurological anomalies and heartbeat in delinquent individuals because these factors are related to central neural system of brain. Studies showed that these features have relationship with antisocial behaviors (Rain, 1994).

For short, children's neurological features which are effective in delinquency are as follows:

1. Intelligence, which is tested by visional words test of Peabody in 3, Stanford-Binet in 5 and Wechsler's test in age 5 and above (Moffitt *et al.*, 1993).
2. Memory neuro-psychological like using Rey Auditory Verbal Learning Test, which is related to remembering and immediate memory in age 13 and above.
3. Reading progress, using academic progress test (Fergusson *et al.*, 1996)

### Child Behavioral Risk Predictors

Over the first years and middle childhood, individual differences in "difficult temperament" and "hyperactivity" play important roles in development of antisocial and delinquent behaviors. Temperament quality and hyperactivity behavior may result in maintaining emerging individual differences and its development to antisocial consequences (Caspi and Moffitt, 1995).

Some researchers believe that there is a relationship between primary expressed problems and subsequent antisocial behavior (Kellam *et al.*, 1983; Moskowitz and Schwartzman, 1989). However, some researchers do not believe in this mechanism and believe that this relationship is not very clear (Kerr *et al.*, 1997).

For short, behavioral features of children which are related to delinquency include:

1. Difficult temperament via questionnaire which is filled out by parents (mother).
2. Attachment questionnaire
3. Hyperactivity
4. Expressed problems

Therefore, the present research aims to investigate relationship between some effective factors and delinquency. We try to investigate three categories of factors which are considered as effective in adolescent delinquency. These categories include:

1. Parental factors including mother's age, father's crime commitment background
2. Family factors including socio-economic status, attachment style and divorce
3. Cognitive and personality factors including IQ, academic progress considering average mark, personality traits

Therefore, research hypotheses are as follows:

**H1:** There is a relationship between parental factors and adolescent delinquency.

**H2:** There is a relationship between family factors and adolescent delinquency.

**H3:** There is a relationship between cognitive and personality factors and adolescent delinquency.

## MATERIALS AND METHODS

### Methodology

Research design is of correlation type.

Statistical Population of Delinquent Adolescents

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All male delinquent adolescents in the Centers for Rehabilitation and Training in Golestan Province (living in Gorgan City) and Mazandaran Province (Living in Sari City)

### Normal Adolescents' Statistical Population

All adolescents who studied in high schools of Gorgan and Sari Cities in 2013-2014 academic years. 71 people were selected as sample members from the first population (i.e. delinquent adolescents). They were selected by means of accessible sampling method out of all help-seekers of the Centers in Golestan and Mazandaran Cities who were imprisoned for committing crimes. Further, 71 normal adolescents were selected from high schools by means of random cluster sampling method.

### Demographic Information Questionnaire

This is a researcher-made questionnaire. It was used to collect data on clinical and normal groups. This questionnaire evaluated information on respondents' academic level, academic average mark, parents' features, adolescents' crimes typology, possible parents' crime type, background of the respondents, number of sisters and brothers, physical or psychological problems or disabilities, parents' remarriage, income level, socio-economic status.

### Wechsler's Revised Children IQ Test

This test evaluates intelligence of children aged 6-16 years and 11 months and 30 days. It is made up of 12 subscales. Implementation of this test yields three intelligence quotients: verbal intelligence, practical intelligence and total intelligence. Reliability of the questionnaire was evaluated both by split-half method and retest method for subsidiary tests and for verbal, practical and total intelligences. Average reliability coefficients by means of split-half method were equal to 0.94, 0.90 and 0.96 for verbal, practical and total intelligence dimensions, respectively. Retest coefficients were equal to 0.93, 0.90 and 0.95 for age groups 6.5-7.5, 10.5-11.5 and 14.5-15.5, respectively. Validity of this questionnaire was equal to 0.78 (correlation with Stanford-Bineh test), 0.66 (group intelligence test). It was also equal to 0.71 (P Body College academic progress test) and 0.39 (using classroom marks) (Karami, 2007).

### Academic Progress

Demographic questionnaire data were used for collecting data on academic progress. The last academic year's average mark was considered as measurement criterion.

### NEO's Five-Factor Personality

The short form of this questionnaire (NEO-FFI) is a 60-item questionnaire and is used for evaluation of five main factors of personality i.e. extroversion, neuroticism, agreeableness, openness to experience and conscientiousness (dutifulness). The questions are answered on a Likert scale. Cranach's alpha coefficients for neuroticism, extroversion and openness were between 0.68 and 0.83. Reliability coefficients for adaptability and conscientiousness were equal to 0.79 and 0.69 (McCrae and Costa, 1985).

### Collins & Read Attachment Scale

Attachment scale was first designed by Collins & Read in 1990 and revised in 1996. Attachment theory is the base of this test. This scale involves self-evaluation of skills for establishment of relationships and self-description of forming attachment relations with respect to attachment paradigm. It contains 18 items and they are answered on a 5-point Likert scale. Results of factor analysis indicate three subscales in this questionnaire 1. Dependence 2. Closeness and 3. Anxiety. Reliability coefficient of this questionnaire (Cranach's alpha) was equal to 0.68. Validity of this questionnaire was also verified in the previous studies (Pakdaman, 2001).

### Hypothesis Testing and Result

Factors influencing delinquency

**Table 1: Indices of Omnibus test for model coefficients (logistic regression model fitness)**

Stage	Index	$\chi^2$	Df	Sig
1	stage	162.791	8	0.000
	block	162.791	8	0.000
	model	162.791	8	0.000

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Logistic regression was used to predict factors affecting delinquency in delinquent and non-delinquent groups. In the first stage, model fitness hypothesis was investigated to do logistic regression. Results showed that conduction of logistic regression is allowable because not all coefficients are equal to zero ( $X^2_{(8)}=162.791$ ,  $p<0.01$ ).

**Table 2: Variance prediction by predicting variables**

Stage	Model indices		
	Goodness of fit statistic	Cox and Shell Kai squared	Nagel Kirk kai square
1	20.977	0.706	0.943

Results of table 2 show that predicting variables explain 94.3% ( $R^2=0.943$ ) of the variance of delinquency possibility. Further, results of table 3 show that precision of total prediction of the model is equal to 97. This prediction precision is equal to 96.8 for delinquent individuals and equal to 97.2% for normal individuals.

**Table 3: Precision of model prediction**

Stage	Prediction precision percentage		
	Total prediction precision	Precision of prediction for delinquent individuals	Precision of prediction for non-delinquent individuals
1	97	96.8	97.2

**Table 4: Results of regression analysis for prediction of delinquency by predicting variables**

st	variable	regre	Standar	Parent	df	Sig.	Expect	Certainty level	
a		ssion	d error	test			ed	95%	
g		coeffi					change	low	high
e		cient							
		(B)							
1	Father's crime	4.585	1.969	5.424	1	0.02	97.974	2.067	4643.19
	commitment	0.315	0.164	3.677	1	0.055	1.37	0.993	1.891
	Mother's age	1.020	0.423	3.525	1	0.026	2.627	1.147	6.423
	Socio-economic status	5.012	2.495	4.413	1	0.23	4.249	0.031	6.820
	Verbal intelligence	1.029	0.462	4.967	1	0.026	2.797	1.132	6.913
	Academic progress	0.469	0.149	9.905	1	0.002	0.625	0.467	0.838
	neuroticism	1.315	0.402	3.998	1	0.002	2.002	1.013	5.891
	anxious attachment	-0.074	0.103	0.513	1	0.47	1.077	0.879	1.319
	parents' divorce	0.393-	0.14	7.923	1	0.005	1.481	1.127	1.947
	conscience	-	15.451	7.831	1	0.005	0.000	-	-
	fixed	43.23							
		8							

Results of the investigation of influence of predicting variables on delinquency reveal that father's commitment of crime has a significant influence on delinquency in delinquent individuals ( $P=0.000$ ,  $Wald_{(1)}=5.424$ ) and its level in delinquent individuals is 97.974 times as much as that of normal individuals. Socio-economic status also has a significant influence on delinquency ( $Wald_{(1)}=3.525$ ,  $P=0.000$ ). Low socio-economic status in delinquent individuals was 2.627 times as much as that of normal individuals. IQ also has a significant influence on delinquency ( $Wald_{(1)}=4.413$ ,  $P=0.000$ ). Low IQ coefficient in delinquent individuals was 4.249 times as much as that of normal individuals. The influence of academic average mark on delinquency was also significant ( $Wald_{(1)}=4.967$ ,  $p=0.000$ ). Low average mark in delinquent adolescents leads to delinquent action 2.797 times as much as that of non-delinquent group. Individuals with neuroticism trait are also significantly prone to delinquency ( $Wald_{(1)}$



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=3.998,  $p=0.000$ ) and they may commit crime 2.002 times as much as that of normal individuals. Furthermore, individuals with conscientiousness trait are also significantly prone to delinquent action ( $Wald_{(1)} = 7.923$ ,  $P=0.000$ ) and their delinquent action probability is 1.481 times as much as that of normal individuals.

## **Discussion and Conclusion**

The present research aimed to predict delinquent action risk in delinquent adolescents. Results of the research showed that crime commitment in father has a relationship with delinquent behavior in adolescents. This result conforms to the results of studies conducted by Brennan and Mednick (1993), Farrington (2000), Farrington (1995), Farrington *et al.*, (2001), Farrington *et al.*, (1996), Hare (1970), Harris *et al.*, (2001), Mandel (1997), and McCord (1977, 1983). However, mother's age was not a predictor of delinquent actions in adolescents. Special types of parents' psychological harms like antisocial personality disorder are related with behavioral disorders in children. This relationship is obvious for father's case. There is a strong relationship between parents' antisocial personality disorder and children's antisocial models; regardless of the fact that father is at home or regardless of the intensity of contact between father and child (Mash and Wolf, 2012). Having criminal, antisocial and delinquent family members (father, brother and sister) is a predictor of boys' delinquent behaviors and each of the mentioned members can independently predict delinquency and crime in boys (Farrington *et al.*, 1996).

Results of studies also showed that low social and economic status and insecure attachment style are related to delinquency. This result conforms to the results of studies conducted by Allen *et al.*, (1998); Farrington *et al.*, (2010); Marsh *et al.*, (2003); Rice and Mirzadeh (2000); and Zimmerman (2004). However, parents' divorce was not a significant predictor of delinquency in the present research.

Socio-economic status is a stable but weak predictor of delinquency. If this factor is accompanied by other factors like low family income it has a high predicting power and can be measured as variance when income, family status and parents' job status are important (Farrington, 2000). According to Salekin and Lynam (2010), poverty is an important independent predictor of antisocial behavior and is a strong predictor of emotional and inter-individual problems. Furthermore, Farrington *et al.*, (2010) showed that economic growth and family income can protect adolescents against antisocial behavior development. This is especially true for boys who express antisocial behavior in their 13, live in poverty, those who have friends with antisocial behaviors and those who experience a lot of physical punishment.

According to Bowlby's model (1973) children's attachment to their first caretaker has an important role in processing cognitive and emotional information in inter-individual relationships. Individuals who have problems with forming secure attachment to parents or first caretakers have also problems with self-evaluableness feeling and trusting in others and are prone to psychiatric diseases. Bowlby (1973) believes that separation from mother affects delinquency development because children with insecure attachment consider their environment as threatening and they become separated from their society emotionally.

Results also showed that cognitive and personality factors like IQ, Academic growth, and personality traits had significant relationship with delinquency. Low IQ, low academic growth, personality traits like conscientiousness and neuroticism in Neo's five personality factors were powerful predictors of delinquency. These results conform to the results of studies conducted by Kaslow *et al.*, (1990), Farrington *et al.*, (2010), Goodman (1995), Lynam (2010), Lynam *et al.*, (2005), Miller and Lynam (2003), Meier *et al.*, (2006), Maniadaki & Kakouros (2011) and Nagin *et al.*, (1995). Studies showed that verbal intelligence in delinquent adolescents is lower than practical intelligence. This is a sign of defect in language (Mash and Wolf, 2012). This may affect reading, problem-solving, writing and memory. Verbal and linguistic defects intervene in controlling emotions and therefore play role in antisocial behaviors and absence of empathy (Hastings *et al.*, 2000). Parallel to cognitive problems, delinquent adolescents unfortunately have problems with academic progress and this indicates subtle relationship between cognitive variable and academic progresses. Studies showed that in criminals, verbal intelligence is 8 points (Hogan, 1999); 15 points (Lynam *et al.*, 1993), 8 to 12 points (Ahadi *et al.*, 2002) and 5 points (Hodges *et al.*, 1990) lower than non-verbal intelligence and reported verbal intelligence point around 85. Some studies even found that 13% of delinquent adolescents were mentally-retarded (Maniadaki and

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Kakouros, 2011). Most of such adolescents are those who have been dropped out of schools due to academic failure and inability to understand contents and low IQ. These are students who lack good verbal and linguistic skills (Moffitt, 1993). However, they have good practical abilities.

In neuroticism, we have subscales like anger and hostility, sympathy, self-awareness, anxiety, vulnerability and impulsiveness. Individuals with high scores in neuroticism are prone to having illogical beliefs and fail to control their impulses and get along with stresses difficultly. Lynam (2010) reported high levels of anxiety in delinquent adolescents and Eysenck (1967) also showed that in single-ovum twins, neuroticism has a strong relationship with antisocial behavior, behavioral disorders and alcohol abuse. In conscientiousness dimension, a low score indicated recklessness, laziness, and non-purposefulness and weakness. Therefore, studies unanimously revealed that agreeableness and conscientiousness strongly influence delinquency (Lynam, 2010).

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